CLAIM AMENDMENTS

1. (Previously Presented) A medical probe, comprising:

an elongate shaft; and

an inflatable balloon distally located on the elongate shaft, the inflatable balloon comprising a hydrophilic polymer being electrically conductive and having a tensile strength of at least 3000 psi when hydrated with an electrolytic solution, wherein the balloon is configured to inflate to specified equilibrium dimensions when subjected to about one atmosphere of internal pressure.

2. (Previously Presented) The medical probe of claim 1, wherein the hydrophilic polymer has an elasticity that permits the balloon to inflate to dimensions greater than its equilibrium dimensions under more than one atmosphere of internal pressure without failing.

3. (Previously Presented) The medical probe of claim 2, wherein the balloon can be inflated to dimensions at least 50% greater than its equilibrium dimensions.

4. (Previously Presented) The medical probe of claim 1, wherein the hydrophilic polymer, when hydrated, comprises from 10 volume percent to about 40 volume percent water.

5. (Previously Presented) The medical probe of claim 4, wherein the hydrophilic polymer, when hydrated, comprises about 20% volume percent water.

6. (Previously Presented) The medical probe of claim 1, wherein the hydrophilic polymer comprises a homopolymeric or co-polymeric thermoplastic polyurethane when hydrated with the electrolytic solution.

7. (Currently Amended) The medical probe of claim 6, wherein the thermoplastic polyurethane is ~~TECOFLEX®~~ a polyether-based aliphatic polyurethane.

8. (Previously Presented) The medical probe of claim 1, further comprising an electrically non-conductive polymer mask adhered to a surface of the balloon to create a pattern of electrically conductive and electrically non-conductive areas when the hydrophilic polymer is hydrated with the electrolytic solution, wherein the electrically non-conductive polymer has physical and chemical characteristics compatible with those of the hydrophilic polymer.

9. (Previously Presented) The medical probe of claim 8, wherein the electrically non-conductive polymer comprises an electrically non-conductive homopolymeric or co-polymeric thermoplastic polyurethane.

10. (Currently Amended) The medical probe of claim 9, wherein the electrically non-conductive polyurethane is ~~TECOFLEX®~~ a polyether-based aliphatic polyurethane.

11. (Currently Amended) The medical probe of claim 8 wherein the electrically non-conductive polymer is ~~NeoRez 967®~~ an aliphatic urethane.

12. (Previously Presented) The medical probe of claim 1, wherein the electrically conductive areas of the balloon have a wall thickness of from about 0.0005" to about 0.005".

13. (Currently Amended) A medical probe, comprising:

an elongate shaft;

an inflatable balloon distally located on the elongate shaft, the balloon having a first diameter, a second diameter ~~distal~~, and a third diameter located between the first and second diameters, wherein the third diameter is less than both the first and second diameters, the first diameter is coupled to the third diameter by a distal-facing sloping surface, and the second diameter is coupled to the third diameter by a proximal-facing sloping surface; and

a therapeutic element located on the distal-facing sloping surface.

14. (Previously Presented) The medical probe of claim 13, wherein the second diameter is less than the first diameter.

15. (Cancelled).

16. (Previously Presented) The medical probe of claim 13, wherein the therapeutic element is selected from the group consisting of an RF energy transmitting element, a microwave energy transmitting element, an ultrasound energy transmitting element, a laser light transmitting element, a drug delivery element, a radiation delivery element, a cryogenic element and a cutting element.

17. (Previously Presented) The medical probe of claim 13, wherein the balloon comprises a hydrophilic polymer being electrically conductive and having a tensile strength of at least 3000 psi when the hydrated with an electrolytic solution.

18. (Previously Presented) The medical probe of claim 17, wherein the hydrophilic polymer, when hydrated, comprises from 10 volume percent to about 40 volume percent water.

19. (Previously Presented) The medical probe of claim 18, wherein the hydrophilic polymer, when hydrated, comprises about 20% volume percent water.

20. (Previously Presented) The medical probe of claim 17, wherein the hydrophilic polymer comprises an electrically conductive homopolymeric or co-polymeric thermoplastic polyurethane when hydrated with the electrolytic solution.

21. (Currently Amended) The medical probe of claim 20, wherein the thermoplastic polyurethane is ~~TECOFLEX®~~ a polyether-based aliphatic polyurethane.

22. (Previously Presented) The medical probe of claim 17, further comprising an electrically non-conductive polymer mask adhered to the distal-facing surface of the balloon to create a pattern of electrically conductive and electrically non-conductive areas when the hydrophilic polymer is hydrated with the electrolytic solution, wherein the electrically non-conductive polymer has physical characteristics compatible with those of the hydrophilic polymer.

23. (Previously Presented) The medical probe of claim 22, wherein the electrically non-conductive polymer comprises an electrically non-conductive homopolymeric or co-polymeric thermoplastic polyurethane.

24. (Currently Amended) The medical probe of claim 23, wherein the electrically non-conductive polyurethane is ~~TECOFLEX®~~ a polyether-based aliphatic polyurethane.

25. (Currently Amended) The medical probe of claim 22, wherein the electrically non-conductive polymer is ~~NeoRez 967®~~ an aliphatic urethane.

26. (Previously Presented) The medical probe of claim 22, wherein the electrically conductive areas of the balloon have a wall thickness of from about 0.0005" to about 0.005".

27. (Previously Presented) The medical probe of either claim 1 or claim 13, wherein the balloon is an ablation balloon.

28. (Previously Presented) The medical probe of claim 27, wherein the balloon is an RF ablation balloon.

29. (Currently Amended) A medical probe, comprising:

an elongate shaft;

an inflatable member distally located on the elongate ~~member~~ shaft, the inflatable member having a proximal end, a distal end, a lumen extending therebetween, and an electrically conductive region; and

an electrode carried by the elongate member, the electrode configuring for being in direct electrical contact with electrically conductive fluid within the inflatable member, the electrode located within the lumen of the inflatable member and proximal to the electrically conductive region of the inflatable member.

30. (Previously Presented) The medical probe of claim 29, wherein the inflatable member comprises hydrophilic polymer being electrically conductive and having a tensile strength of at least 3000 psi when hydrated within an electrolytic solution.

31. (Previously Presented) The medical probe of claim 29, wherein the inflatable member is configured to inflate to specified equilibrium dimensions when subjected to about one atmosphere of internal pressure.

32. (Previously Presented) The medical probe of claim 30, further comprising an electrically non-conductive polymer mask adhered to a surface of the inflatable member to create a pattern of electrically conductive and electrically non-conductive areas when the hydrophilic polymer is hydrated with the electrolytic solution, wherein the electrically non-conductive polymer has physical and chemical characteristics compatible with those of the hydrophilic polymer.

33. (Previously Presented) The medical probe of any of the claims 1, 13, and 29, wherein the elongate shaft is configured to be intravascularly introduced into a patient.

34. (Previously Presented) The medical probe of claim 33, wherein the elongated shaft is configured to be introduced within a heart of the patient.

35. (Previously Presented) A method of treating an ostium of a blood vessel, comprising:

inserting the medical probe of claim 13 through the ostium into the blood vessel;

inflating the balloon, so that expansion of the second diameter dilates the blood vessel, thereby causing a wall of the blood vessel to apply pressure to the proximal-facing sloped surface and to pull the distal-facing sloped surface into intimate contact with tissue in the vicinity of the ostium; and

operating the therapeutic element to provide therapy to the ostium.